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ABSIRACT

MAJOR CONSIDERATIONS AND FINDINGS ARE PRESENTED IN REGARD TO THE UPDATING OF A LONG RANGE CAMPUS PLAN FOR THE DEVELOPMENT OF BUILDINGS, PARKING AREAS, DRIVES AND SIDEWALKS AT DAYTONA BEACH JUNIOR COLLEGE. FOILOWING A CONSIDERATION OF THE BACKGROUND AND PROGRAM OF THE COLLEGE, A SITE ANALYSIS IS PRESENTED. PLANS AND RECOMMENDATIONS ARE OFFERED REGARDING LAND USE, CAMPUS DEVELOPMENT, AND UTILITIES. THE APPENDIX INCLUDES MANY PAGES OF SUPPLEMENTARY DATA CONCERNING THE EXISTING CAMPUS DEVELOPMENT. (FS)

ED036125

CAMPUS PLANNING STUDY

FOR
DAYTONA BEACH JUNIOR COLLEGE
DAYTONA BEACH, FLORIDA

CAUDILL, ROWLETT, SCOTT
Architects, Planners, Engineers
Houston, Texas November 1966

EF 004 042

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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INTRODUCTION

In August, 1965, Daytona Beach Junior College retained the firm of Caudill Rowlett Scott as planning consultants to aid them in the updating of a long range campus plan for the physical development of the College buildings, parking areas, drives and sidewalks. After interviews with College administrators and Division chairmen, a program of total building space needs was developed as a basis for campus analysis and design. The following pages of this report present the major considerations and findings of this study, along with recommendations and plans for the future physical development of the College.

The appendix has included many pages of supplementary data of interest concerning the existing campus development.

The firm of Caudill Rowlett Scott wishes to express its appreciation to the Administration of Daytona Beach Junior College for their assistance in providing information, photos, and data concerning the use of physical facilities at the

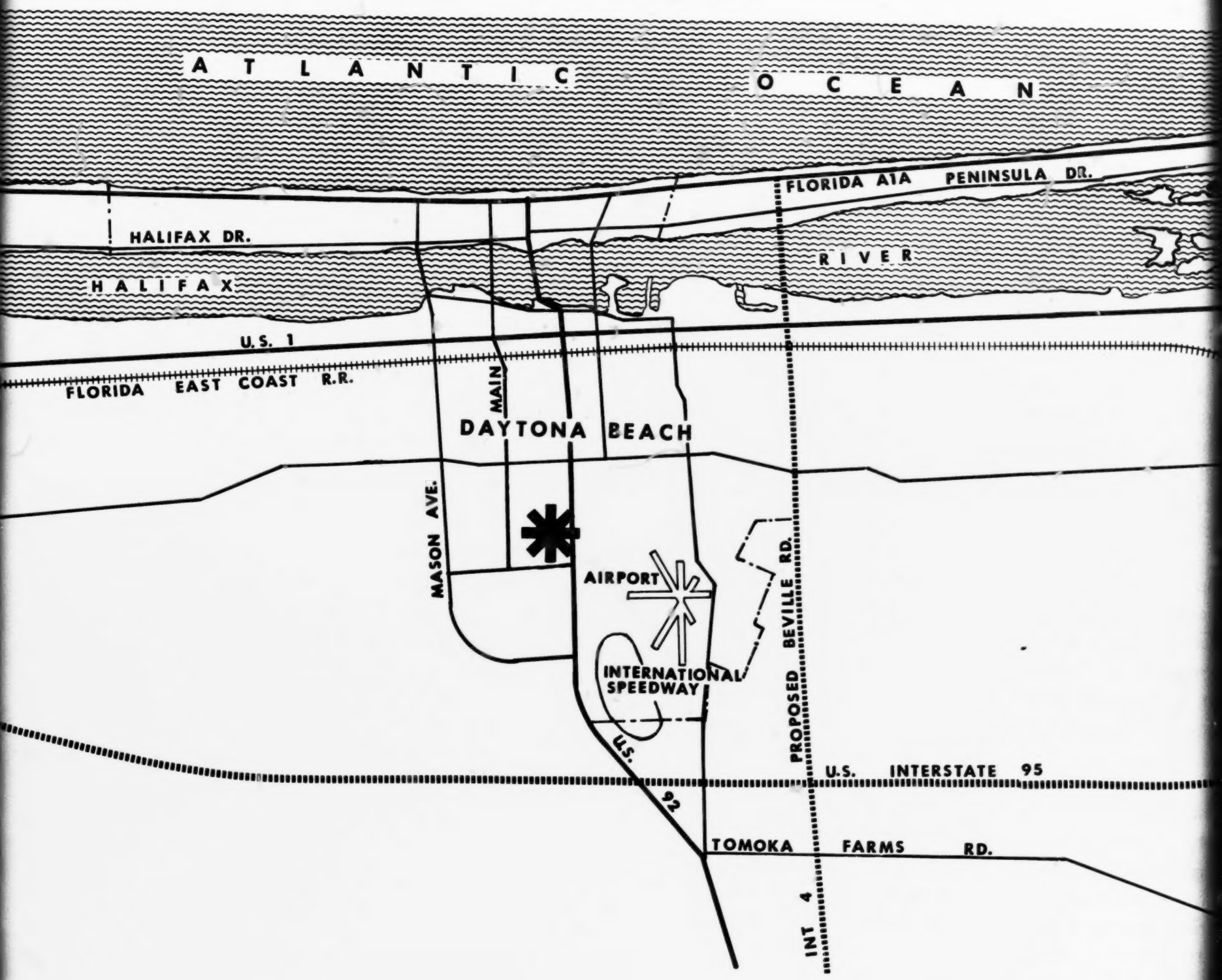
BACKGROUND

LOCATION AND HISTORY

Daytona Beach Junior College serves Volusia and Flagler Counties in the northern part of East Central Florida and is located near the western edge of the City of Daytona Beach, Florida. The site is adjacent to U.S. Highway 92, just northwest of the Daytona Beach Airport and International Speedway.

Daytona Beach Junior College was founded in 1958 to meet the broad post high school educational needs of Volusia and Flagler Counties. Community inspired and dedicated, its early development parallels the vision of its founder, Mary Brennan Karl, who many years ago realized the need for its establishment. The first seven years of the College's operation also parallel the projection of the Community College Council which in 1957 established the priority for its formal organization.

The College is a pioneer in that it is the first institution in Florida to operate a program of a comprehensive nature as defined by the State Legislature and recommended by the Council. Today, three divisions complete its overall structure. They include: a College Division, providing the freshman and sophomore years of the general education requirements for transfer to senior institutions and degree programs in technology, hospitality and medically related areas; an Adult Education Division to meet the needs of a varied adult citizenry; and the Mary Karl Vocational Division which offers a broad range of occupational training. Enrollment in the three divisions increased from slightly less than 4,000 in the fall of 1958 to an estimated 12,000 individuals by the end of the current year.


ATLANTIC OCEAN
FLORIDA A1A PENINSULA DR.
HALIFAX DR.
HALIFAX
RIVER
U.S. 1
FLORIDA EAST COAST R.R.
MAIN
DAYTONA BEACH
MASON AVE.
AIRPORT
INTERNATIONAL SPEEDWAY
PROPOSED BEVILLE RD.
U.S. 92
U.S. INTERSTATE 95
TOMOKA FARMS RD.
INT 4

CLIMATE

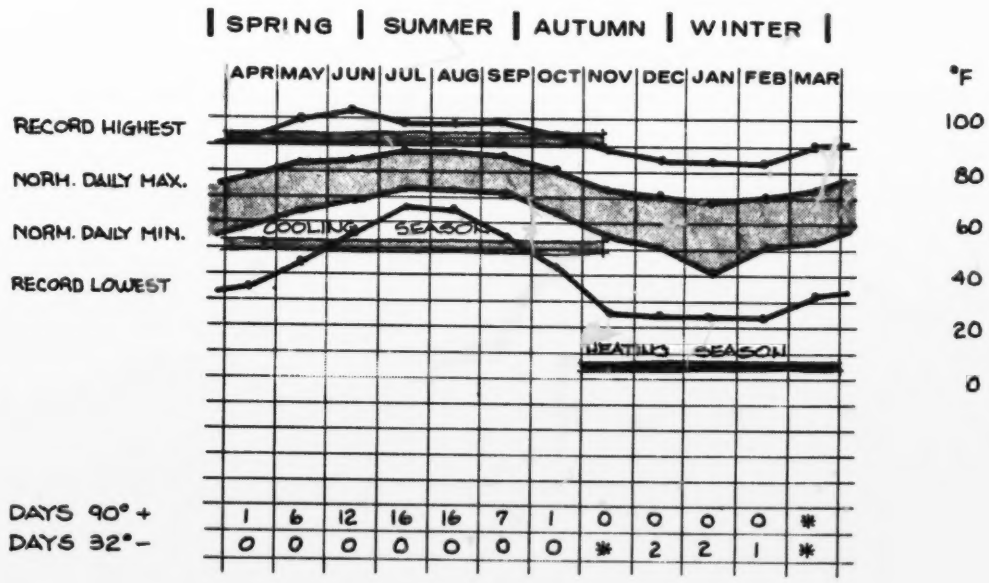
Daytona Beach has a very desirable year-round climate. It does, however, have distinct characteristics that influence campus planning - especially the design of buildings. Many of the earlier buildings of Daytona Beach Junior College were designed for natural ventilation and were oriented with this in mind. Today the buildings are designed as air conditioned space and this is not quite as strong an influence as it was previously. The diagrams on this page were constructed from data published by the U.S. Weather Bureau.

The annual rainfall averaging approximately 50 inches is abundant enough to support a variety of plant growth. Much of the rainfall (better than 60%) occurs between June and October. Rainfalls of up to 4 and 5 inches in a 24 hour period are rare, with a record of slightly over 9 inches in October of 1953.

Annual temperature average is a pleasant 71 degrees with a summer average of 79 degrees and a winter average of 69 degrees. Extremes in temperature are rare with a record low of 24 degrees in February of 1958 to a record high of 102 degrees in June of 1944. Normal daily maximum temperature range is from 70 degrees in January to 88 degrees in August.

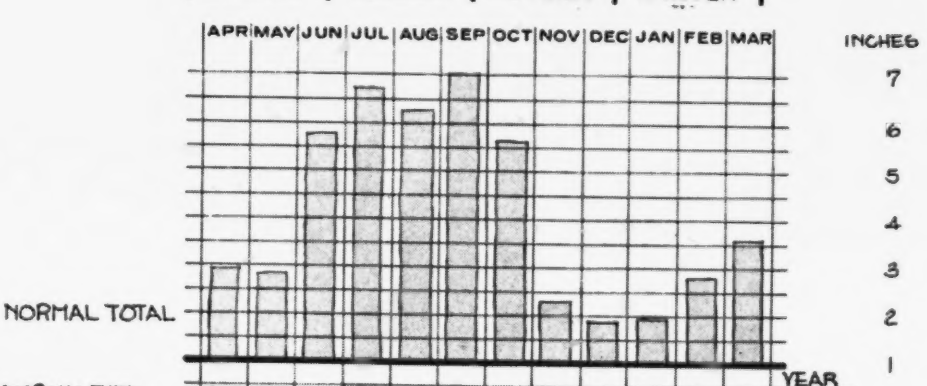
Winds in the Daytona Beach area vary greatly in direction and intensity. Mean hourly speed is approximately 9 miles per hour, generally from the east. Primary direction in summer is from the southwest and in winter from the northwest. Hurricanes are a factor in the Florida climate, but according to the U.S. Weather Bureau, the probability of hurricane winds in Daytona Beach is 1 to 30.

CLIMATE DAYTONA BEACH, FLORIDA TEMPERATURE



	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
DAYS 90°+	1	6	12	16	16	7	1	0	0	0	0	*
DAYS 32°−	0	0	0	0	0	0	0	*	2	2	1	*

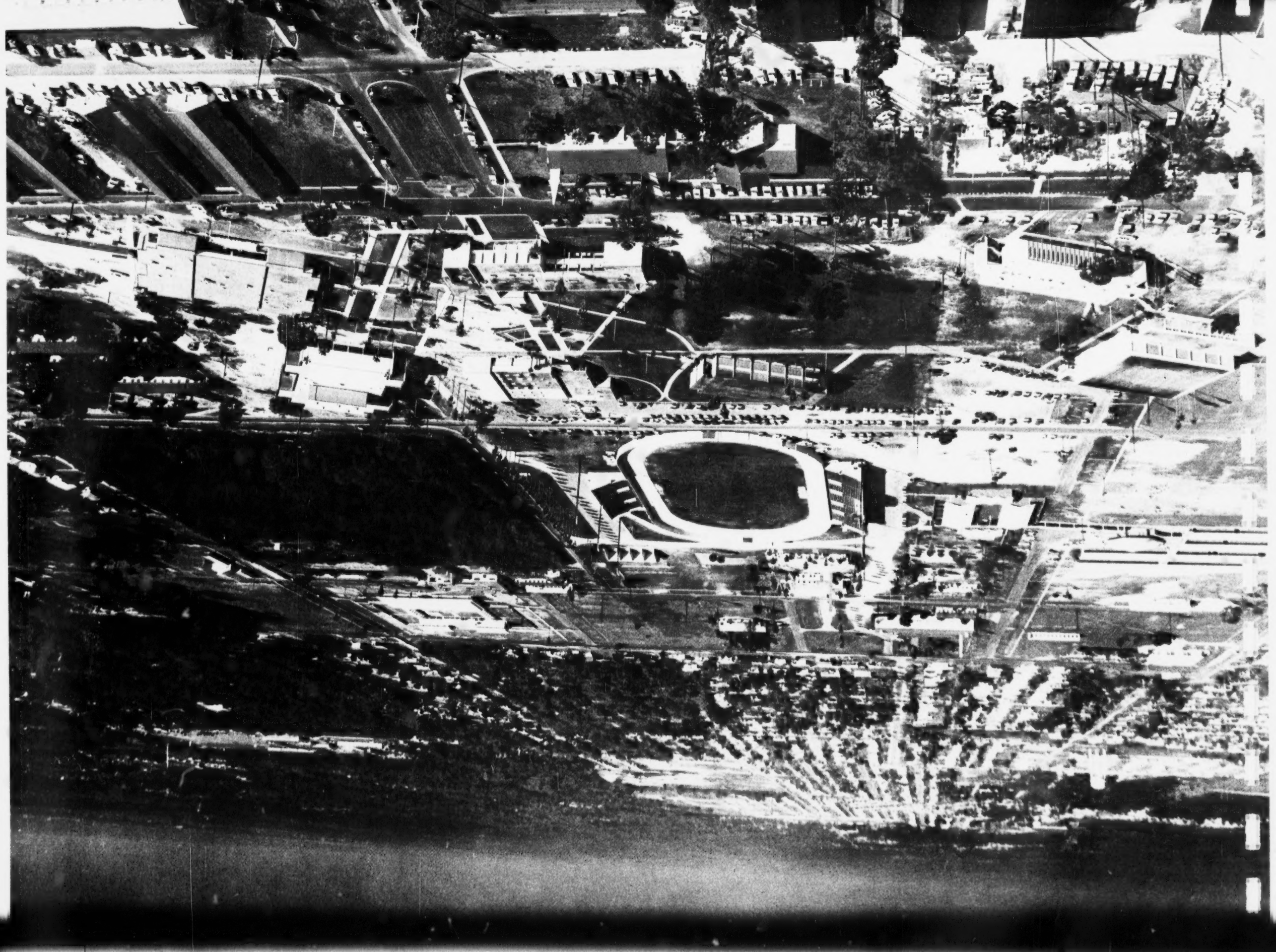
CLIMATE DAYTONA BEACH, FLORIDA PRECIPITATION



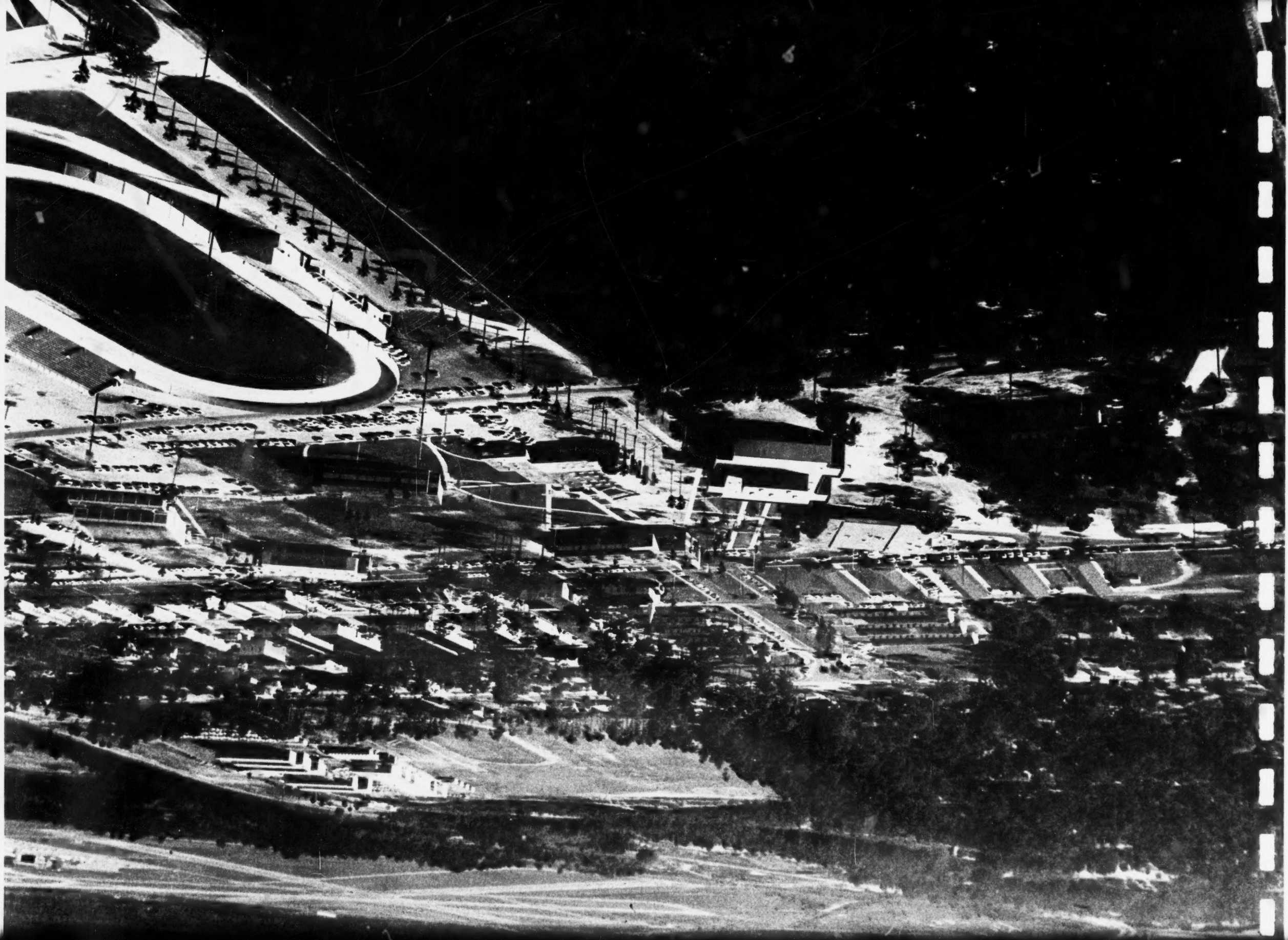
	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	YEAR
NORMAL TOTAL	2.97	2.85	5.81	6.74	6.37	7.00	5.61	2.33	1.95	1.96	2.75	5.56	49.90
MAX. MONTHLY	7.12	5.65	13.43	14.58	9.89	14.02	13.00	4.26	4.85	4.53	9.15	7.75	19.89
MIN. MONTHLY	.49	.45	1.95	1.25	2.64	1.88	.97	.46	.06	.15	.29	.25	.06
MAX. IN 24 HRS.	4.00	4.22	5.04	3.60	4.41	4.49	9.29	2.55	3.27	2.81	3.57	5.74	9.29

A vertical aerial view of existing campus prior to development of Student Center and Humanities Building.

An aerial view of existing campus looking north.



An aerial view of existing campus looking south.



PROGRAM

ENROLLMENT PROJECTIONS

Projections of enrollment for Daytona Beach Junior College have been based on fairly conservative judgments of how the projected growth for the area served by the College will affect the junior college growth. For planning purposes, a total of 5,100 FTE are expected by 1980 that need to be accommodated on campus. Below is a recap showing previous and projected growth by Division through 1980. On the opposite page is a more comprehensive projection of the College Division.

Year (Fall)	College Division Total	College Division FTE	Vocational FTE	Adult *	Total FTE
1958	518	243			
1959	710	401	536		
1960	827	463	483		
1961	908	583	528		
1962	1,256	833	533	100	
1963	1,350	952	548	100	
1964	1,587	1,144	539	100	
1965	1,998	1,428	597	100	2,125
1970	2,975	2,140	750	175	3,065
1975	4,000	2,870	900	250	4,020
1980	5,150	3,700	1,050	350	5,100

FTE — full time equivalent (15 credit hours)

**Central campus oriented (day program)

Volusia County population projections are listed below to indicate the magnitude of the area growth expected by 1980. This would indicate a projection of an additional 120,000 people by 1980.

VOLUSIA COUNTY GROWTH PROJECTIONS

	A	B	C
1960	125,300		
1963	142,000*		
1965	152,000**	150,000	
1970	204,400	190,000	210,000
1975	238,100	224,600	
1980	275,000	260,000**	

A. Growth to 1980 projected by Hammer & Company, Associates. 1965-1980: 132,000 population growth (72%) increase).

B. Kiplinger Letter, 1965-1974, 74,600 increase (50%).

C. Industrial Development Research Council, Atlanta, Georgia.

* Bureau of Business & Economic Research, University of Florida.

**Interpolated figures by Caudill, Rowlett, Scott.

COLLEGE DIVISION GROWTH PROJECTIONS

Year (Fall)	High School Graduates	Freshmen No.	*	Sophomores No.	*	Total Fulltime	Total Part-time	Total	F.T.E.
1958	1,266	188	18	13		201	317	518	243
1959	1,269	195	15	103	55	298	412	710	401
1960	1,349	270	21	133	68	403	424	827	463
1961	1,450	332	25	131	48	463	445	908	583
1962	1,462	512	35	212	64	724	532	1,256	833
1963	1,634	463	32	280	55	743	607	1,350	1,144
1964	1,716	660	40	301	65	961	626	1,587	1,428
PROJECTION 1 (Realistic)									
1970	2,300	1,150	53	650	60	1,800	1,350	3,150	2,250
1975	2,700	1,600	63	900	60	2,500	1,900	4,400	3,100
1980	3,200	2,200	73	1,200	60	3,400	2,500	5,900	4,200
PROJECTION 2 (Conservative)									
1970	2,300	1,100	50	550	55	1,650	1,150	2,800	2,000
1975	2,600	1,400	55	700	55	2,100	1,500	3,600	2,600
1980	3,000	1,700	60	900	55	2,600	1,800	4,400	3,200
AVERAGE (Use as Planning Criteria)									
1970	2,300	1,125		600		1,725	1,250	2,975	2,140
1975	2,650	1,500		800		2,300	1,700	4,000	2,870
1980	3,100	1,950		1,050		3,000	2,150	5,150	3,700

NOTES: (1) 1958-1965 actual figures (2) 1965-1980 projections by Caudill Rowlett Scott *Percentage of previous year.

TOTAL SPACE REQUIREMENTS

The total space required when the College has grown to 3,000 and 4,000 FTE is shown below. The full demand of 5,000 FTE (expected by 1980) is not even shown here because the existing campus site cannot accommodate that level of enrollment with any desirable development pattern.

	Existing	3,000 FTE	4,000 FTE
Humanities	31,500	31,500	31,500
Science *	15,130	20,000	30,000
Social Science *	***	8,000	12,000
English *	***	8,000	12,000
Business Education	***	8,000	8,000
P. E. and Health	18,240	21,000	21,000
Vocational-Technical**	14,290	125,000	160,000
Guided Studies *	***	4,000	6,000
Adult Program *	***	16,000	18,000
Library	15,800	26,000	32,000
Administration *	12,200	30,000	30,000
Student Center	20,150	20,150	28,000
Building Services**	***	6,000	8,000

* Net x 1.5.
** Net x 1.3.
***Included in general classrooms of other buildings.

NOTES: 1. Only permanent buildings are included in Existing column.

2. College Division portion would be:
@Existing - 1,428 FTE
@3,000 FTE Total - 2,140 FTE
@4,000 FTE Total - 2,900 FTE

Additional space required at the 3,000 and 4,000 FTE stages is shown below. These are totals that include all additional space required. This does not include the three buildings now being designed that are shown in the first column of figures.

ADDITIONAL BUILDING SPACE REQUIRED

	Planned	3,000 FTE*	4,000 FTE*
Humanities	--	--	--
Science	--	4,800	14,800
Social Science & English	**	7,000	14,000
Business Education	7,000	--	1,000
P.E. and Health	--	1,200	2,400
Vocational-Technical	105,800	32,000	40,000
Guided Studies	3,300	1,000	3,000
Adult Education	**	16,000	18,000
Library	--	10,200	16,200
Administration	14,000	4,000	4,000
Student Center	--	--	7,000
Building Services	3,300	2,700	4,700

* Total need over and above space now existing or planned.

**Included in gneeral classrooms of other buildings.

PARKING AND OUTDOOR REQUIREMENTS

One of the major considerations of development of a junior college campus is the parking problem. Practically all students, faculty and staff, as well as visitors, use the automobile to get back and forth from their homes to the college. At the present time, very few parking lots are improved for this use. Adjacent streets carry the major load in the College area. Any long range plan for Daytona Beach Junior College should have adequately-sized, well-located, off-street parking lots for a reasonable estimate of needed car spaces. The table following indicates the projected need of parking spaces - a total of over 3,000 spaces, if the College site is developed to handle a student capacity of 4,000 full time equated students.

Required Spaces	Existing	3,000 FTE	4,000 FTE
Students @ 1 car per 1.5 to 2.0 students	1,000	1,770	2,670
Faculty @ 1 car per 12 students	160	250	330
Visitors @ 1 car per 100 students	20	30	40
TOTAL SPACES	1,180	2,050	3,040
Square Feet Required A 350 SF/car	413,000	717,500	1,064,000
Area Required (acres)	9.5	16.5	24.4

P.E. and recreation requirements of the College are outlined below. As seen, these are far in excess of the land area now available for these functions.

	Existing Need	Need at 4,000 FTE
Track and field	5	5
Game and ball fields	6	10
Game courts	2	3
TOTAL (acres)	13	18

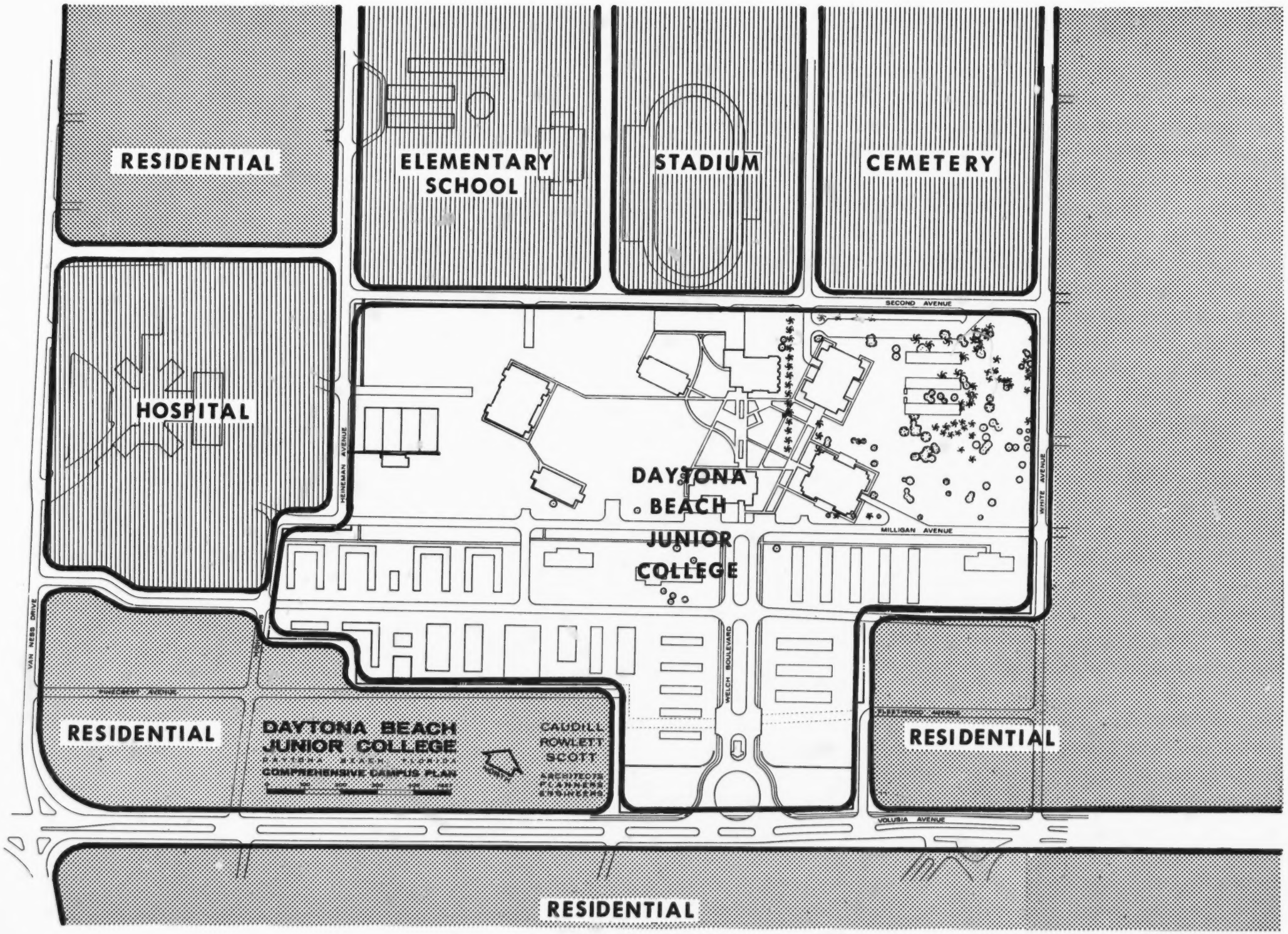
SITE ANALYSIS

ADJACENT LAND USE

One of the primary community influences on the long range development of Daytona Beach Junior College is the adjacent land use pattern. The existing campus site has been surrounded primarily with public oriented development - a hospital, an elementary school, a cemetery and an athletic field and stadium. Residential area adjacent to the campus is oriented primarily to the southern edge. This development presents real difficulties in any expansion of the campus site. At the present time, the existing stadium site presents the best possibility. If a new city stadium were to be erected at a new site, this land might become available as an extension to the campus in future years.

One environmental aspect of the existing land use pattern is the fact that very little frontage is available adjacent to the most important street serving the campus area (Volusia Avenue or U.S. Highway 92). This presents a problem of identification for the College in that the primary entrance to the College now splits this rather small amount of frontage.

Most of the development adjacent to the campus cannot be considered as a blighting influence - only as a major barrier to growth. Acquisition of these residential units south of the campus would be quite expensive for the relatively small amount of acreage involved.

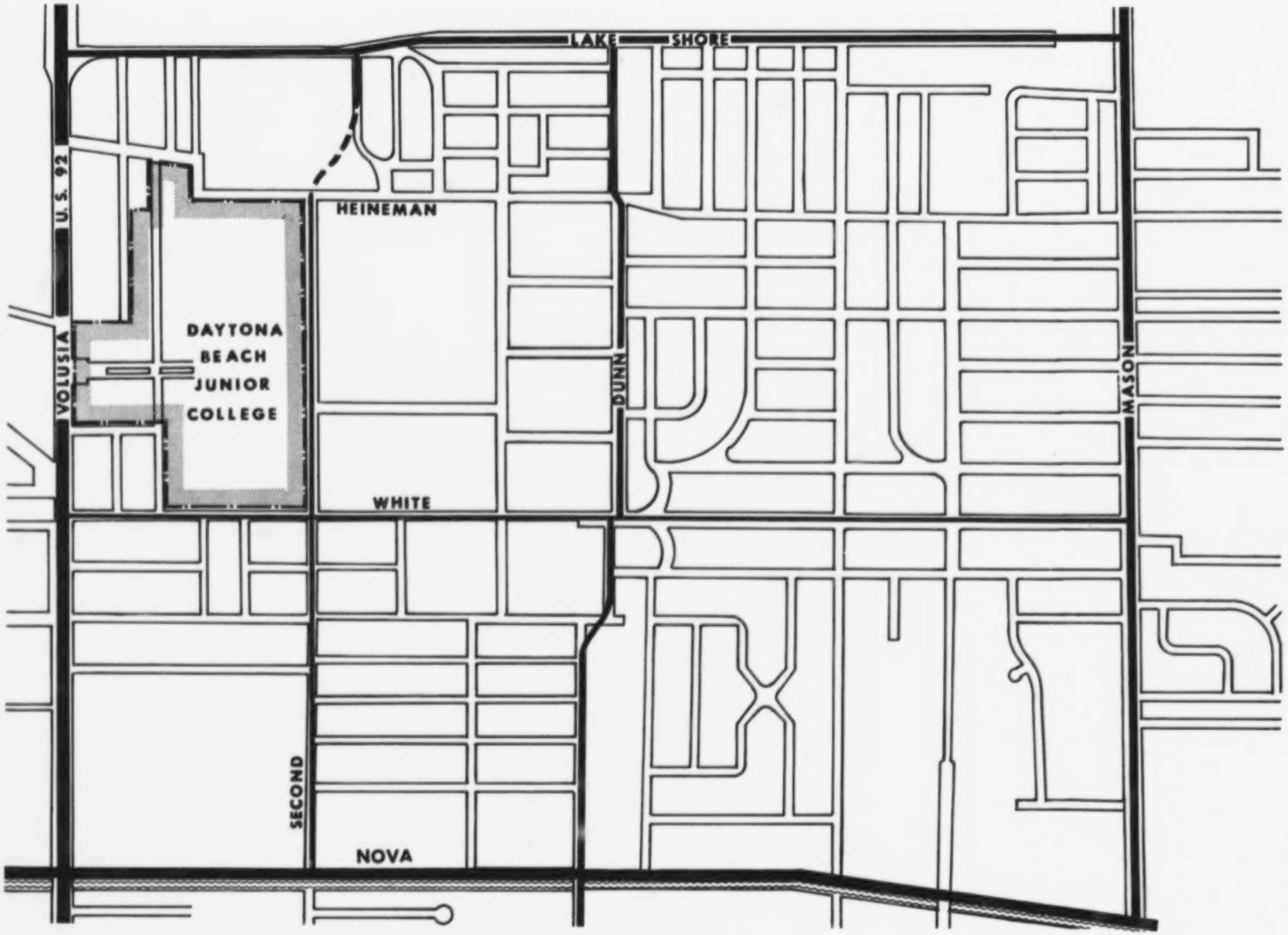

RESIDENTIAL
ELEMENTARY SCHOOL
STADIUM
CEMETERY
HOSPITAL
SECOND AVENUE
HEINEMAN AVENUE
WHITE AVENUE
MILLIGAN AVENUE
DAYTONA BEACH JUNIOR COLLEGE
VAN NESS DRIVE
PINECREST AVENUE
WELCH BOULEVARD
FLEETWOOD AVENUE
RESIDENTIAL
DAYTONA BEACH JUNIOR COLLEGE
DAYTONA BEACH FLORIDA
COMPREHENSIVE CAMPUS PLAN
CAUDILL ROWLETT SCOTT
ARCHITECTS PLANNERS ENGINEERS
RESIDENTIAL
VOLUSIA AVENUE
RESIDENTIAL

MAJOR STREETS SERVING CAMPUS

Another major influence of the community on the College development is the highway and street network serving the college area. The major street plan shown across the page shows the relationship of Daytona Beach Junior College to the surrounding street development. Major influence is, of course, U.S. Highway 92 (Volusia Avenue) which is adjacent to the college site on the south, and serves as the primary entrance to the College. At present this entrance has no signals to control the turning movements into or from the main entry drive. Signals on Volusia Avenue are located at White Street and at Lake Shore Drive. White Street is the second most influential street serving the school, and will become even more important as an access to the College as traffic increases on U.S. Highway 92 and turning movements primarily at signalized intersections are required for efficiency and safety.

A possibility exists that a signalization of the intersection of U.S. Highway 92 and Highlands (an extension south of Heineman) will take place as the Hospital expands its facility. This possibility will not adversely affect the college traffic pattern and should provide better access to the western edge of the campus.

Second Street is shown as a collector street that might tie White and Lake Shore Drive together. At the present time, Second does not continue west of Heineman. If the college site can be extended north (the only possibility being the existing stadium area), the presence of a collector street on Second would present something of a problem to physically connecting the two areas. If the campus does not expand north, Second Street as a collector would be a desirable asset.


LAKE SHORE
U.S. 92
VOLUSIA
HEINEMAN
DAYTONA BEACH JUNIOR COLLEGE
DUNN
MASON
WHITE
SECOND
NOVA

EXISTING CAMPUS PATTERNS

The campus of Daytona Beach Junior College is located on the site of the old Second W.A.C. Training Center constructed during the early 1940's. Several of the temporary buildings in that development are still being occupied by various functions on the campus - primarily by the Vocational Educational Division of the College. For the most part, these are located south of Milligan Avenue. Most of the permanent buildings are located north of Milligan Avenue and are used by the College Division.

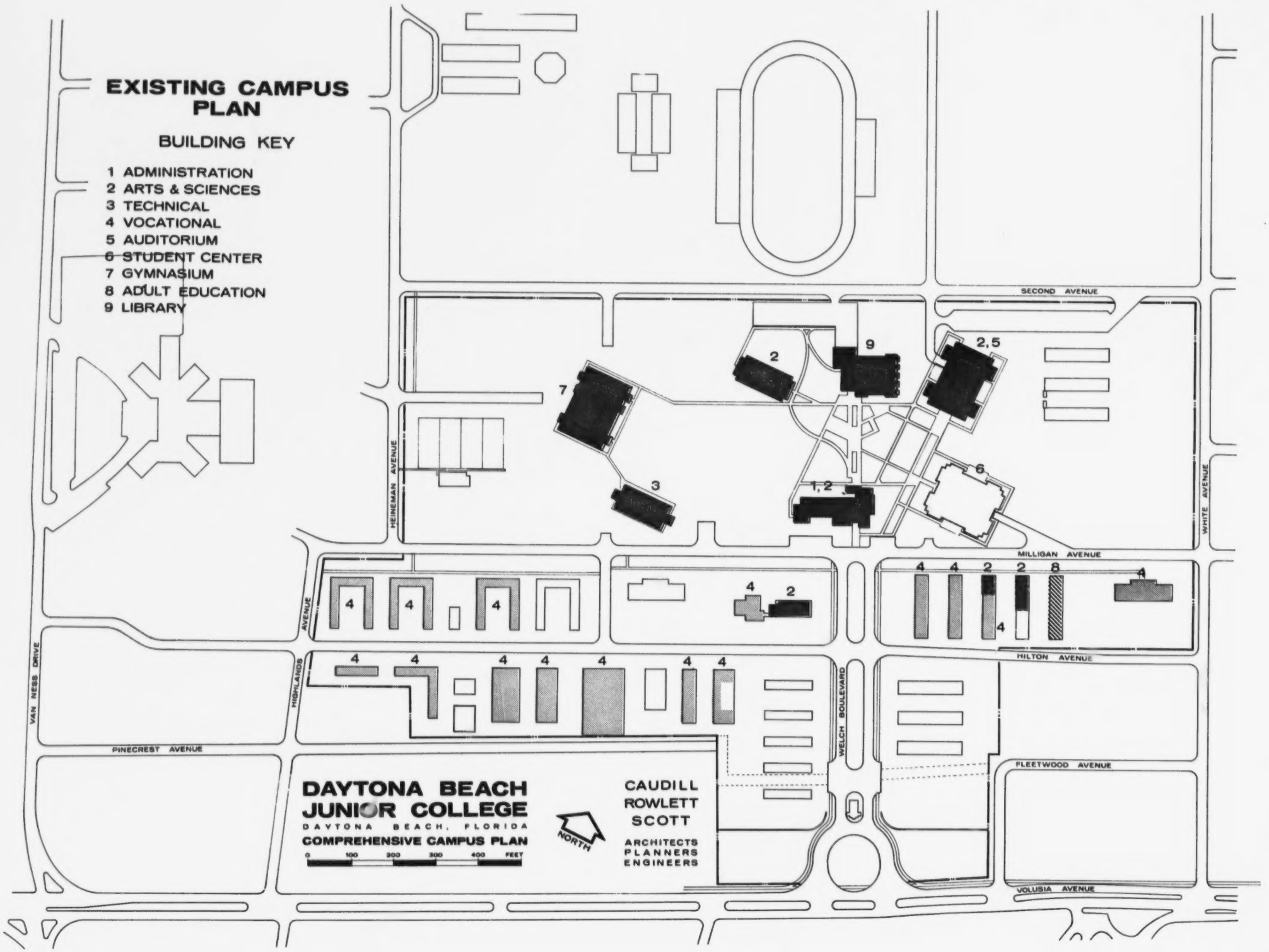
Very little permanent parking has been developed on the existing campus. At the present time, an area immediately north of the Gymnasium, Library and Humanities buildings is being paved. Now, cars park mostly on the streets or between the temporary buildings south of Milligan Avenue.

The buildings that are the most community-wide generators are the Gymnasium, Library, Student Center, Administration and Humanities building (auditorium is located here).

EXISTING CAMPUS PLAN

BUILDING KEY

1 ADMINISTRATION
2 ARTS & SCIENCES
3 TECHNICAL
4 VOCATIONAL
5 AUDITORIUM
6 STUDENT CENTER
7 GYMNASIUM
8 ADULT EDUCATION
9 LIBRARY



EXISTING BUILDINGS

Following is a recap of the existing permanent buildings on campus. A total of 102,529 square feet of net assignable space exists at present. However many temporary buildings are used at present - primarily by the Vocational Division. The map on the opposite page identifies these buildings listed below.

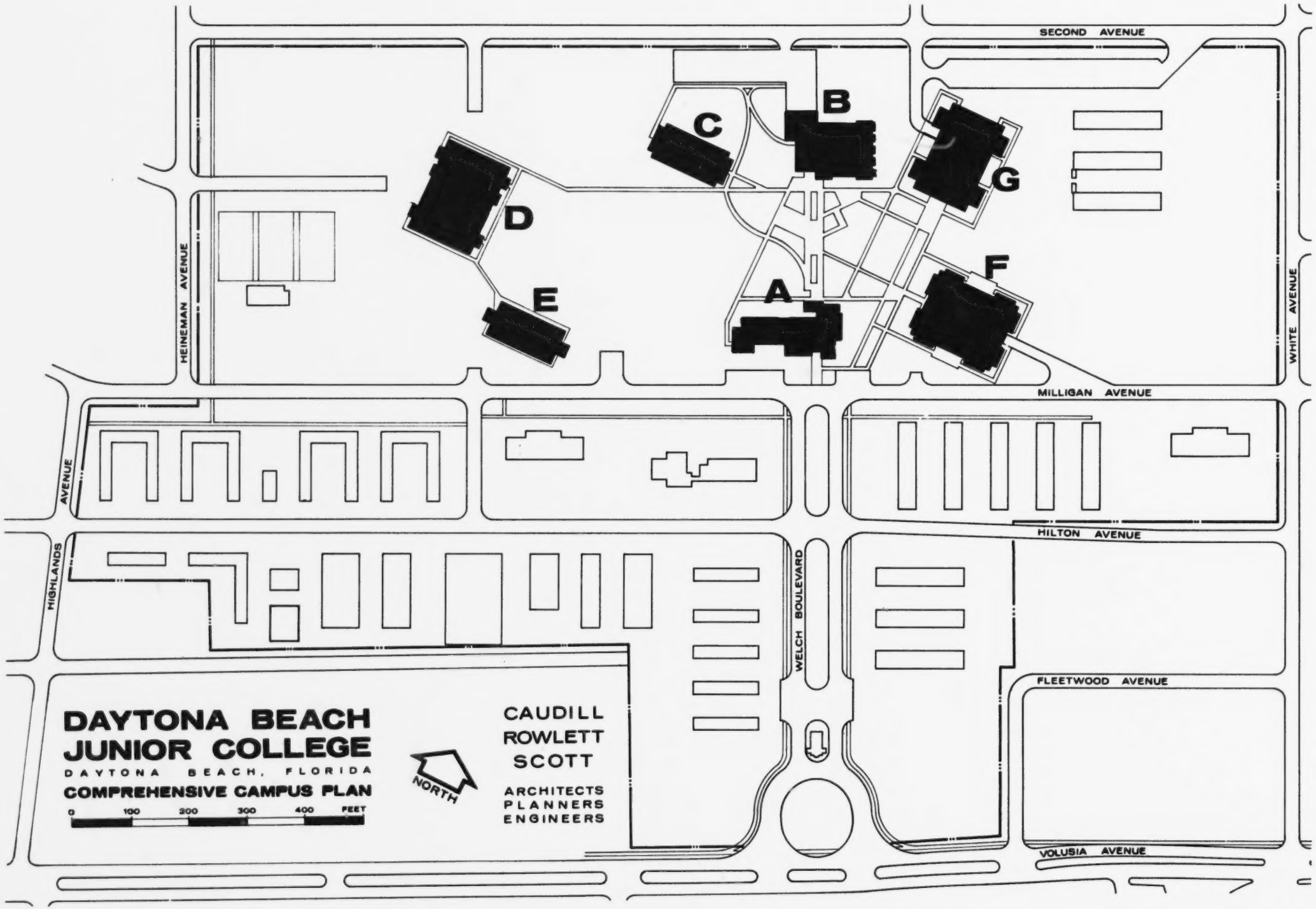
Name	Date Completed	Gross Sq. Ft.	Net Assignable Sq. Ft.*
A. Collins Hall	1960	20,018	14,300
B. Mary Karl Library	1960**	15,800	14,150
C. Science Building	1959	15,132	12,011
D. P.E. Building	1962	18,237	15,996
E. Bailey Hall	1963	14,291	10,615
F. Student Center	1966	20,152	14,303
G. Fine Arts Building	1966	31,500	21,154
TOTALS		135,130	102,529

* Does not include halls, stairs, janitor closets, mechanical rooms, general storage, etc.

**Addition in 1966.

Name	Classrooms	Labs	Rooms	Offices*
Collins Hall	6-3	-	-	6-12
Mary Karl Library	-	-	-	2-3
Science Building	0-1	5	2	6-12
P.E. Building	2-1	-	-	4-7
Bailey Hall	1-0	6	-	10-15
Student Center	1-0	-	-	3-3
Fine Arts Building	3-1	3	1	4-8
TOTALS	13-6	14	3	35-60

* Figures indicate rooms and capacity.


SECOND AVENUE
B
C
G
D
F
A
E
HEINEMAN AVENUE
WHITE AVENUE
MILLIGAN AVENUE
AVENUE
HILTON AVENUE
HIGHLANDS
WELCH BOULEVARD
FLEETWOOD AVENUE
VOLUSIA AVENUE
DAYTONA BEACH
JUNIOR COLLEGE
DAYTONA BEACH, FLORIDA
COMPREHENSIVE CAMPUS PLAN
0 100 200 300 400 FEET
NORTH
CAUDILL
ROWLETT
SCOTT
ARCHITECTS
PLANNERS
ENGINEERS

BUILDINGS BEING DESIGNED

During the planning study, three buildings have been planned (preliminary design phase). These buildings, as shown on the opposite page, have the following functions and area.

A. #1 — Vocational - Technology

Photography	3,600 SF
Printing	3,600
Dry Cleaning	3,000
Air Conditioning	4,000
Small Motors	3,800
Cabinet Making	5,400
Central Receiving	2,600
Drafting Lab	1,500
Classrooms (2)	1,300
sub-total (net)	28,800 SF
Total Gross Area	36,000 SF

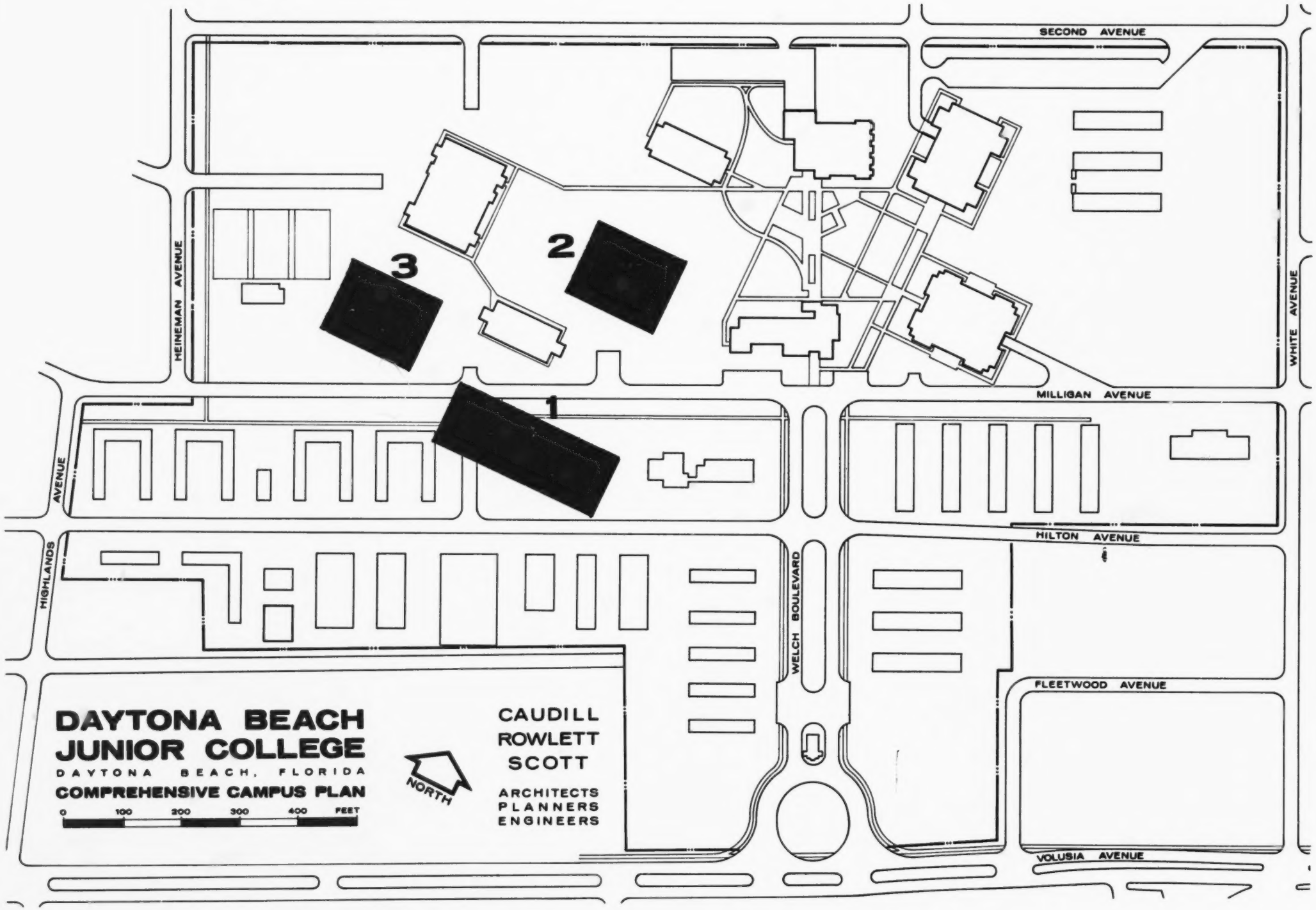
B. #2 — General Purpose and Vocational - Technology

Student Personnel	13,500 SF
Data Processing	3,900
Business Education	17,600
Classrooms & Lecture (4)	3,500
sub-total	38,500 SF (net)
Total Area	53,700 SF (gross)

C. #3 — Vocational Technology

Health Related	12,000 SF
Cosmetology	5,300
Drafting	3,000
Electronics	6,500
Watch Repair	1,900
Mechanical Technology	3,200
Civil, Building & Contracting Technology	4,000
Classrooms (4)	2,600
sub-total	38,500 SF (net)
Total Area	53,700 SF (gross)

TOTAL PLANNED SPACE 143,400 SF (gross)


SECOND AVENUE
HEINEMAN AVENUE
WHITE AVENUE
MILLIGAN AVENUE
HILTON AVENUE
HIGHLANDS
WELCH BOULEVARD
FLEETWOOD AVENUE
VOLUSIA AVENUE
1
2
3
DAYTONA BEACH
JUNIOR COLLEGE
DAYTONA BEACH, FLORIDA
COMPREHENSIVE CAMPUS PLAN
0 100 200 300 400 FEET
NORTH
CAUDILL
ROWLETT
SCOTT
ARCHITECTS
PLANNERS
ENGINEERS

ULTIMATE CAMPUS CAPACITY

The present campus has a total area of approximately 45 acres. The existing core facilities (library, student center and auditorium) are designed for an enrollment of 3,000 FTE students. The possibilities for campus site expansion are very limited with the area just north of the college occupied by a football field and stadium representing the best possibility. The acquisition of residential areas to the south would be very expensive and only offer a small amount of acreage as previously mentioned. The use of multi-level parking structures has been considered, but the problems of financing construction of these parking structures makes them highly questionable as a planning criteria for developing a parking solution for the campus. Using a conservative figure of $3,000 per vehicle, providing parking even for a 4,000 FTE campus would require at least 1,500 spaces in parking structures, at a development cost of $4.5 million dollars.

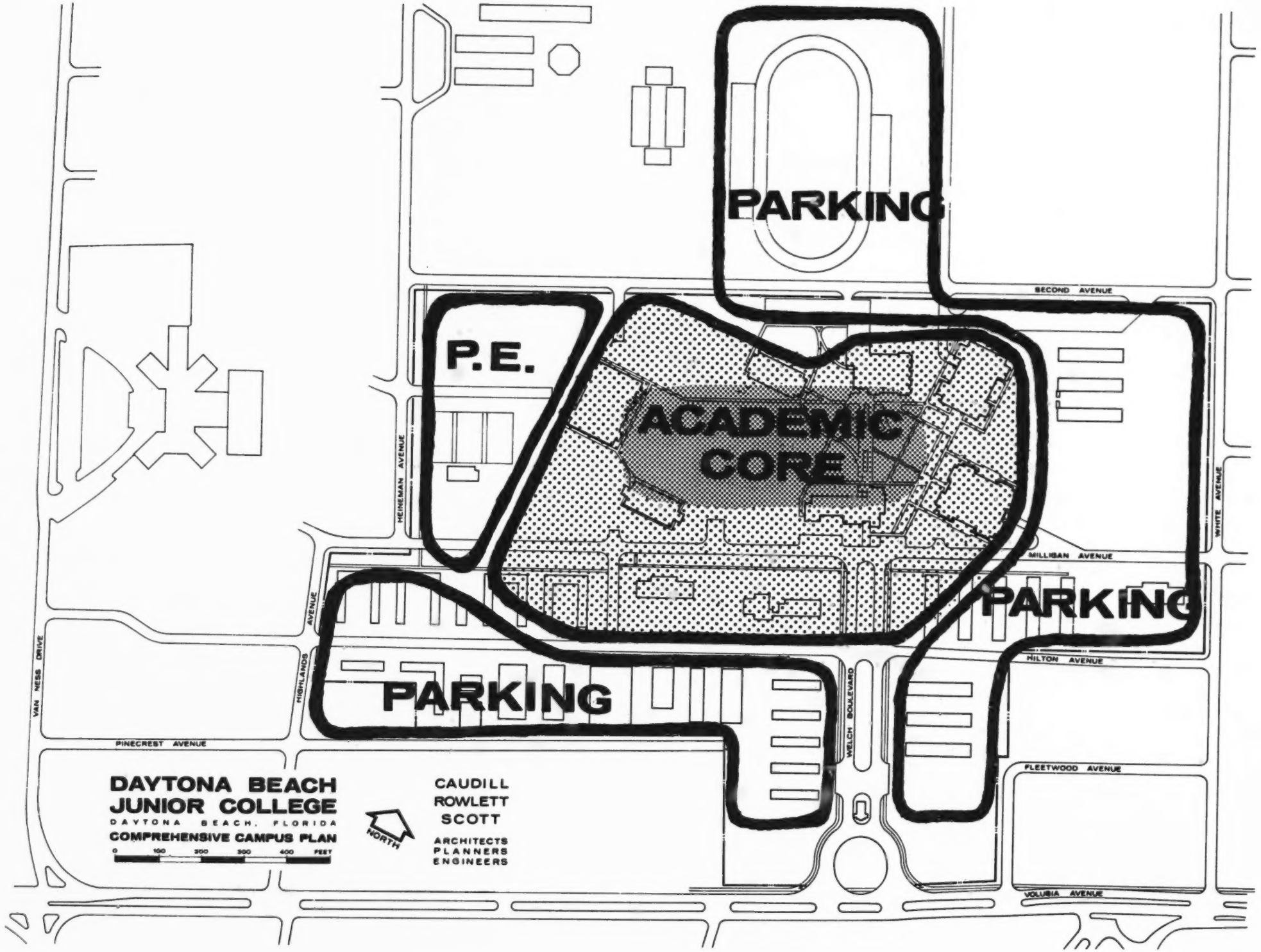
PLANS AND RECOMMENDATIONS

LAND USE PLAN

The Land Use Plan shown on the opposite page is the most important basic element of physical plans found in this report. Specific buildings and development may take on a variety of form and shape, but they should respond to the overall concept of land use zones as pictured here.

A zoning approach to campus planning offers flexibility in the development of individual elements without disrupting relationships of the whole. The plan should be followed to give the overall balance and ordered arrangement of future development.

This recommended plan represents what is felt to be the most logical and appropriate use of the available site, based on the existing pattern of development. It has been influenced by configuration of site, existing buildings, location of streets serving the campus and possible staging of future development. This plan, however, cannot accommodate a 5,000 FTE student enrollment that is projected for the year 1980. See a discussion of this analysis on page 26. A campus developed on this land use pattern could house a development of 3,000 FTE student enrollment with a fairly good environment (P.E. excepted).


PARKING
P.E.
ACADEMIC CORE
PARKING
PARKING
SECOND AVENUE
MILLIGAN AVENUE
MILTON AVENUE
FLEETWOOD AVENUE
VOLUSIA AVENUE
PINECREST AVENUE
HEINEMAN AVENUE
HIGHLANDS AVENUE
VAN NESS DRIVE
WELCH BOULEVARD
WHITE AVENUE
DAYTONA BEACH JUNIOR COLLEGE
DAYTONA BEACH, FLORIDA
COMPREHENSIVE CAMPUS PLAN
0 100 200 300 400 FEET
NORTH
CAUDILL ROWLETT SCOTT
ARCHITECTS PLANNERS ENGINEERS

CAMPUS DEVELOPMENT PLAN

The map on the opposite page is a plan of the recommended total development of the existing campus at Daytona Beach Junior College. It represents a campus with facilities capable of supporting a full time equivalent (FTE) student enrollment of 3,000 students. Approximately 1,700 parking spaces can be developed in the areas shown for parking. (This is some 300 spaces less than the number projected as being required for a 3,000 FTE campus.)

This campus plan indicates the recommended grouping of proposed new buildings, streets, walks and open spaces. Those buildings not already planned have been represented as simple rectangles for planning purposes. The exact size and shape of individual buildings will vary from these shapes as shown as they are architecturally programmed, designed and budgeted for construction. The general arrangement and location should be followed as closely as possible to keep the relationship between buildings and open spaces.

Buildings proposed (other than existing and those now planned) are listed below with their total gross area shown.

Buildings	Area per Floor	Floors	Total Gross
1 - Vocational	18,000	1	18,000
2 - Lecture	6,000	1	6,000
3 - Labs & Classrooms	7,000	2	14,000
4 - Vocational	11,200	1	11,200
5 - Administrative	8,100	2	16,200
6 - Adult, General	8,400	2	16,800
7 - Service Center & Vocational	10,000	1	10,000
TOTAL			92,200

RECOMMENDATIONS

Recommendations for the general development of the college that are most primary are:

1. Develop the existing campus to accommodate a design level of no more than 3,000 full time equated student enrollment. The plan across the page is based on this recommended design level (maximum).

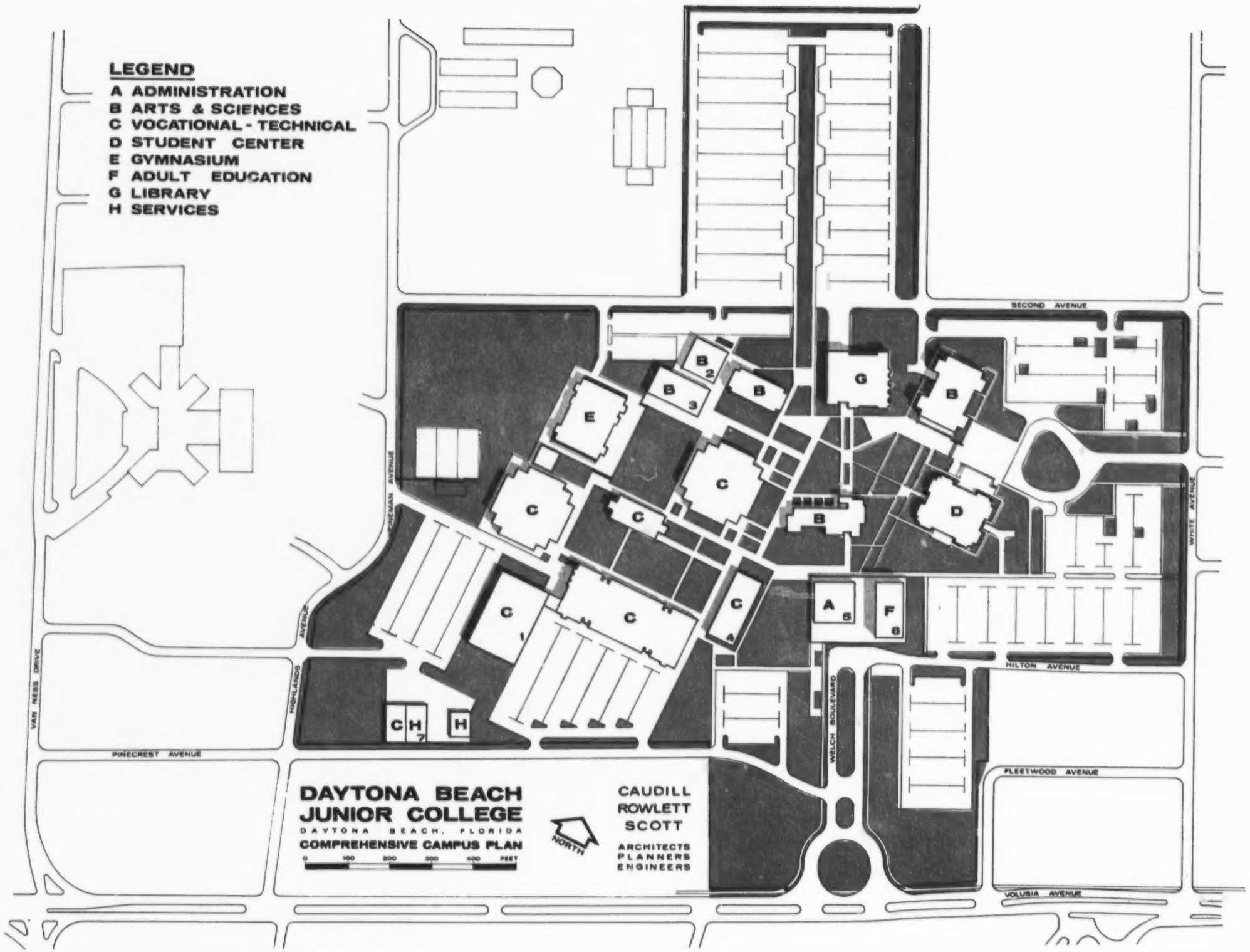
2. If possible, acquire or gain use of the 8 acre tract that is now occupied by the football field and stadium and develop primarily as parking space (it would provide approximately 620 spaces). Until the parking would be required, it could be used as a P.E. facility.

3. Acquire and develop a new campus site, of 150 - 200 acres, located adjacent to or within close proximity to the network of major highways generally west of the present campus. Given a four year lead time for site acquisition, programming, planning and construction, acquisition of a site should be accomplished in 1967.

4. Develop campus groupings of related programs, whether they are separated by academic organization or not. Examples: business education, drafting, reading, nursing, etc. This would gain many advantages from a building utilization standpoint.

5. When, and if, a new administration building is constructed in the future as proposed, the existing Collins Hall should be converted to a general classroom and departmental office building.

6. Acquire the few parcels in the southwest corner of the present site to "square off" that corner.


LEGEND
A ADMINISTRATION
B ARTS & SCIENCES
C VOCATIONAL - TECHNICAL
D STUDENT CENTER
E GYMNASIUM
F ADULT EDUCATION
G LIBRARY
H SERVICES
SECOND AVENUE
HILTON AVENUE
FLEETWOOD AVENUE
VOLUSIA AVENUE
PINECREST AVENUE
VAN NESS DRIVE
HIGHLANDS AVENUE
WELCH BOULEVARD
WHITE AVENUE
DAYTONA BEACH
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DAYTONA BEACH, FLORIDA
COMPREHENSIVE CAMPUS PLAN
0 100 200 300 400 FEET
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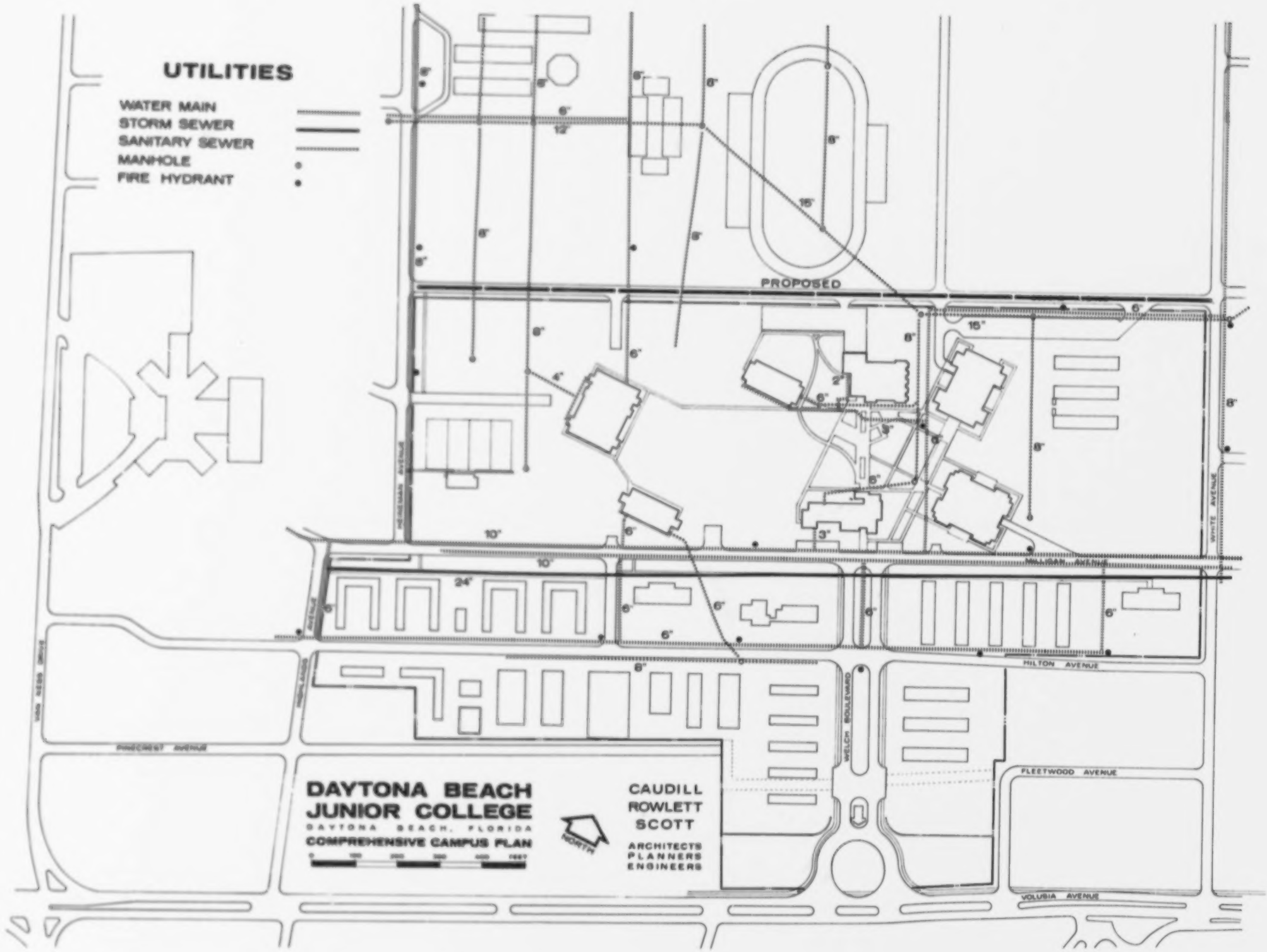
ENGINEERS

UTILITIES PLAN

The majority of the utility system now serving Daytona Beach Junior College is in city street rights-of-way. These are primarily located in Second and Milligan Avenues. Future development would not substantially change this basic pattern. In fact, rather than having major elements of sewer, water and storm drainage lines crossing between these two east-west services, it is recommended that future additions be thought of as short extensions to these two basic linear forms of service. This would mean that future buildings and development in the center of the campus should have short area drains to either Second or Milligan Avenue, or be elevated to drain at grade back to these two laterals.

Drainage will become an increasing problem with the additional building development and paving for pedestrian walks and service access on the campus. At present, most of the campus drains to the east with an approximate fall of 10 feet across the 1,900 feet of campus. Many of the existing campus problems have been solved with ditches and small culverts. In the years ahead, most of the drainage should be directed to central area drains and the ditches eliminated. Depending upon location of development, the central drains would connect either north to the Second Avenue drain or south to the Milligan Avenue drain.


UTILITIES
WATER MAIN
STORM SEWER
SANITARY SEWER
MANHOLE
FIRE HYDRANT
PROPOSED
HILTON AVENUE
FLEETWOOD AVENUE
VOLUSIA AVENUE
WELCH BOULEVARD
DAYTONA BEACH
JUNIOR COLLEGE
DAYTONA BEACH, FLORIDA
COMPREHENSIVE CAMPUS PLAN
NORTH
CAUDILL
ROWLETT
SCOTT
ARCHITECTS
PLANNERS
ENGINEERS

39,40

APPENDIX

PROPOSED UTILIZATION FACTORS

	Teaching Station Utilization	Student Station Utilization
Classrooms	70%	75%
Lecture Hall	70%	75%
Large Lecture Hall	45%	60%
Lab - Science	60%	75%
Lab - Nursing	70%	75%
Lab - Language	70%	75%
Lab - Business	50%	75%
Lab - Technical	50%	75%

BUILDING INVENTORY

Building	Year Constructed	Gross Square Feet	Net Square Feet	% Net of Gross
Science	1959	15,132	12,000	79
Collins	1960	20,018	14,300	71
P.E.	1962	18,237	16,000	88
Bailey	1963	14,291	10,615	74
Lecture	1942	3,800	2,516	66
Student Center	1966	20,152	14,303	71
Fine Arts	1966	31,500	21,154	67

EXISTING PERMANENT BUILDINGS - CLASSROOMS & LABS

Building	Room No.	Room Utilization*	Area	Capacity	SF/SS	Use
Collins	201	97%	630	20	31.5	Reading Lab
	202	70%	630	36	17.5	General Classroom
	203	65%	630	36	17.5	General Classroom
	204	80%	630	36	17.5	General Classroom
	205	75%	630	36	17.5	General Classroom
	206	75%	630	36	17.5	General Classroom
	221	45%	600	20	30.0	Secretarial Science
	222	75%	600	35	16.7	General Classroom
	223	60%	630	20	31.5	Language Lab
Science	8	62%	1,092	24	45.6	Biology Lab
	9	67%	1,352	75	18.0	Lecture
	13	75%	1,352	75	18.0	Lecture
	14	70%	1,092	24	46.5	Biology Lab
	22	80%	893	40	22.5	General Classroom
	23	45%	1,351	18	75.0	Art Lab
	26	45%	1,200	24	50.0	Chemistry Lab
	29	85%	1,248	30	41.6	Physics Lab
P.E.	Gym	67%	10,622	50	212.0	Gym
	7	50%	736	42	17.5	General Classroom
	35	70%	736	42	17.5	General Classroom
Bailey	101	45%	900	16	56.0	Technical Lab
	102	22%	900	16	56.0	Technical Lab
	103	38%	900	16	56.0	Technical Lab
	104	35%	900	16	56.0	Technical Lab
	210B	70%	1,330	25	53.2	Nursing Lab
	212	75%	884	40	22.1	Nursing Lab
	215	80%	1,560	24	65.0	Drafting Lab

Building	Room No.	Room Utilization*	Area	Capacity	SF/SS	Use
Lecture Hall	1	37%	1,656	150	11.0	Teaching Auditorium
Student Center	7		693	40	17.0	General Classroom
Humanities	Aud.		3,800	583	6.5	Teaching Auditorium
	101		1,100	20	55.0	Art Studio
	102		1,100	20	55.0	Art Studio
	103		972	18	54.0	Art Studio
	208		620	36	17.0	General Classroom
	209		620	36	17.0	General Classroom
	210		620	36	17.0	General Classroom
	231		1,416	36	17.0	Rehearsal Room

*Based on 40 Hours per Week (1965).

COLLEGE DIVISION - SPACE PROGRAM, 1965-66

	Lecture			
	Scheduled Sections	Enrollment	Student Contact Hours	Periods/ Week
Humanities	14-1	504-49	900-147	28-3
Art				
Music	1-0	8-0	24-0	3-0
Biology	8-2	527-93	1581-279	24-6
Chemistry	8-0	121-0	363-0	24-0
Math	33-8	962-291	3063-903	105-24
Physical Science	4-2	452-101	1354-303	11-6
Physics	2-0	59-9	177-0	6-0
Nursing	2-0	85-0	255-0	6-0
Economics	2-1	72-26	216-78	6-3
Education	5-1	134-27	402-81	15-3
History	7-3	166-57	498-171	21-9
Philosophy & Logic	7-1	199-34	562-102	18-3
Psychology	12-2	288-43	864-129	36-6
Social Science	23-2	1001-99	1774-297	49-6
Sociology	1-1	26-26	78-78	3-3
English	43-8	1504-194	2710-506	94-21
Reading	10-2	168-29	504-87	30-6
Languages	8-2	111-21	43-170	30-0
Communication Media	1-0	27-0	54-0	2-0

	Lecture			
	Scheduled Sections	Enrollment	Student Contact Hours	Periods/ Week
Accounting	4-2	95-44	358-154	15-7
Business Administration	7-3	180-63	540-189	21-9
Secretarial Science	5-0	69-0	266-0	18-0
Food Service	1-1	20-20	60-60	3-3
Law Enforcement	2-1	52-49	156-147	6-3
P.E. & Health	26-0	586-0	1182-0	53-0
Technical Education	29-13	424-120	1043-287	86-39
Honors	1-0	26-0	26-0	1-0
Guided Studies	13-0	374-0	1122-0	39-0

Hyphenated figures indicate Total-Night.

COLLEGE DIVISION - SPACE PROGRAM, 1965-66

	Laboratories			
	Scheduled Sections	Enrollment	Student Contact Hours	Periods/ Week
Humanities				
Art	9-3	134-53	485-186	32-10
Music	2-1	74-20	144-40	4-2
Biology	16-2	335-36	1105-108	48-6
Chemistry	6-0	123-0	369-0	18-0
Math				
Physical Science				
Physics	2-0	60-0	180-0	6-0
Nursing	7-0	85-0	805-0	53-0
Economics				
Education				
History				
Philosophy & Logic				
Psychology				
Social Science				
Sociology				
English				
Reading				
Languages				
Communication Media				

	Laboratories			
	Scheduled Sections	Enrollment	Student Contact Hours	Periods/ Week
Accounting				
Business Administration				
Secretarial Science				
Food Service				
Law Enforcement				
P. E. & Health				
Technical Education	8-2	61-16	183-48	24-6
Honors				
Guided Studies				

Hyphenated figures indicate Total-Night.

COLLEGE DIVISION - STUDENT CONTACT HOURS, FALL SEMESTER 1965-66

	Scheduled Sections		Periods/Week		Student Contact Hours		%	
Humanities	14		28		900		3.8	
Art	9		32		485		2.1	
Music	3	26	7	67	168	1,553	.7	6.6
Biology	24		72		2,586		11.0	
Chemistry	14		42		732		3.1	
Math	33		105		3,063		13.0	
Physical Science	4		11		1,354		5.8	
Physics	4	79	12	242	357	8,092	1.5	34.4
Education	5		15		402		1.7	
History	7		21		498		2.1	
Philosophy & Logic	7		18		562		2.4	
Psychology	12		36		864		3.7	
Social Science	23		49		1,774		7.6	
Sociology	1		3		78		.3	
Food Service	1	56	3	145	60	4,238	.3	18.1
English	43		94		2,710		11.6	
Languages	8		30		430		1.8	
Communication Media	1	52	2	126	54	3,194	.2	13.6
Accounting	4		15		358		1.5	
Business Administration	7		21		540		2.3	
Economics	2		6		216		.9	
Secretarial Science	5		18		266		1.1	
Law Enforcement	2	20	6	66	156	1,536	.7	6.5
P.E. & Health	26		53		1,182		5.1	
Honors	1		1		26		.1	
Nursing	9		53		805		3.5	
Technical Education	37		111		1.226		5.2	
Guided Studies	13		39		1,122		4.8	
Reading	10	23	30	69	504	1,626	2.1	6.9
TOTAL	329		933		23,478		100.0	

$\frac{23,478}{1,428}$ = 16.5 contact hours/FTE

COLLEGE DIVISION - RANGE OF CLASS SIZES, 1965-66

	0-9	10-19	20-29	30-39	40-49	50-59	60-69	Over 79	Total
Humanities		5	5	2				2	14
Art	2	5	2						9
Music	1		1			1			3
Biology		0-6	1-10	4-0	1-0		1-0	1	8-16
Chemistry	2-0	3-2	3-4						8-6
Math		2	20	8	1	1	1		33
Physical Science	1				1		1	1	4
Physics			2	2					4
Nursing									
Economics			1		1				2
Education			4	1					5
History		2	3	2					7
Philosophy & Logic		1	5						6
Psychology				11	1				12
Social Science		2	16	1	1	1		2	23
Sociology			1						1
English		4	34					4	42
Reading		6	4						10
Languages	2	4	2						8
Communication Media			1						1
Accou ing		1	3						4
Business Administration	2	1	1	4					8
Secretarial Science	2	2	1						5
Food Service			1						1
Law Enforcement	1				1				2
P. E. & Health									26
Honors			1						1
Technical Education	11-2	15-4	4-0					1	31-6
Guided Studies			7	6					13
TOTAL	25-2	56-12	151-14	36-0	6	3	3	11	291-28

Hyphenated figures indicate Lecture-Lab.

EXISTING SPACE FACTORS — Square Feet of Space Required to Teach One Student Contact Hour in a Given Subject Area

	Existing (1965-1966)			
	CR	LH	LLH	Lab
Humanities	1.39	-	1.16	-
Art	-	-	-	4.52
Music	1.39	-	-	-
Biology	-	1.1	1.53	1.95
Chemistry	2.29	-	-	3.25
Math	1.07	1.56	-	1.30
Physics	1.07	-	-	1.18
Physical Science	-	-	1.13	-
Education	.79	2.00	-	-
History	.76	2.90	-	-
Philosophy	.73	1.93	-	-
Psychology	1.69	3.87	-	-
Social Science	1.08	-	.81	-
Sociology	-	-	-	-
Food Service	-	-	-	-
English	1.00	1.70	1.62	-
Languages	-	-	-	1.75
Comm. Media	.78	-	-	-
Accounting	.82	-	-	-
Business Administration	.61	-	-	-
Economics	.46	-	-	-

	Existing (1965-1966)			
	CH	LH	LLH	Lab
Sec. Science	-	-	-	2.26
Law Enforcement	-	-	-	15.83
P.E. & Health	1.44	-	-	-
Nursing	-	-	-	1.94
Honors	-	-	-	1.10
Reading	-	-	-	.86
Guided Studies	.70	1.67	-	.57
Technical Education				
CD	-	-	-	5.41
LS	-	-	-	4.76
LT	-	-	-	5.26
LY	-	-	-	4.61
MT	-	-	-	32.86
GR	.58	-	-	3.90

PROPOSED SPACE FACTORS – Square Feet of Space Required to Teach One Student Contact Hour in a Given Subject Area

	CR	LH	LLH	Lab
Humanities	.9	-	1.0	-
Art	-	-	-	5.5
Music	-	-	-	Spec.
Biology	-	.9	-	2.1
Chemistry	-	-	-	3.7
Math	.9	-	-	-
Physics	-	-	-	2.0
Physical Science	-	-	.7	-
Education	.8	-	-	-
History	.8	-	-	-
Philosophy	.8	-	-	-
Psychology	.8	-	-	-
Social Science	.8	-	.7	-
Sociology	-	-	-	-
Food Service	-	-	-	-
English	1.0	-	.8	-
Languages	-	-	-	2.0
Comm. Media	.8	-	-	-
Accounting	.8	-	-	-
Business Adm.	.8	-	-	-
Economics	.8	-	-	-
Sec. Science	-	-	-	2.2
Law Enforcement	2.0	-	-	-
P.E. & Health	.8	-	-	-
Nursing	-	-	-	2.6
Honors	.8	-	-	-
Reading	-	-	-	1.0
Guided Studies	.8	-	-	-
Technical Education				
CD	-	-	-	5.4
LS	-	-	-	4.5
LT	-	-	-	5.0
LY	-	-	-	4.7
MT	-	-	-	7.0
GR	-	.9	-	4.2

LARGE LECTURE (Above 70)

Course		Enrollment	Student Contact Hours	Hours/Week	Meeting
Humanities	211	122	122	1	Th 9 LH
Humanities	211	82	82	1	Th 2 LH
Physical Science	101	349	1,047	3	MWF 11 PE
Social Science	101	204	204	1	M 8 LH
Social Science	101	203	203	1	M 1 LH
General Biology	101	257	771	3	TTh 8 PE
English	101	150	150	1	F 9 LH
English	101	148	148	1	F 10 LH
English	101	140	140	1	F 12 LH
English	101	135	135	1	F 1 LH
TOTAL			3,002	14	

$\frac{3,002}{23,478}$ = 12.9% of Total Program (214 average in large lecture)